1: Honigmann E-5. (1943-1945) 1949 ND12 Nahane ND12

804 high enough to carry wherever an article of corresponding size is to be manufactured. An object to be fabricated in dimensions to match another article may also be compared to the latter by means of a length of string in which a knot is tied at the required length. Thus in the construction of a coffin, the length and width of the deceased were observed to be taken with a piece of string. The height of the reclining body, however, was ignored, hence the coffin was made too low.

412 Wedges for splitting wood are manufactured as required. They are cut from the lower
401 portion of a black spruce sapling and sharpened with an ax to a long tapering blade. Chips of wood are used as wedges in whip sawing. The back of a long handled ax head is used as a maul.

415 The implements associated with most cabins are a broom, funnel, and a dustpan cut from
322 a five gallon oil can. One family used an eagle wing as a whisk broom. When cooking is done on open fires, the tea stick is an indispensable piece of household equipment. It consists of a green willow pole, five or six feet long and an inch or more in its greatest diameter. The heavier section of the pole is sharpened and thrust into the ground at a forty-five degree angle to the fire. The upper section of the pole is notched for the handle of the kettle. The pole may be turned aside from the fire in removing the vessel. In a few days, when the ground becomes too soft to support the pole, a rock may be placed on top of the buried portion of the wood and another stone thrust into the apex made by the pole as it leaves the ground. Tea poles are discarded when they become dry or charred. When meat is roasted in front of open fires smaller poles, about three feet high are cut, and thrust into the ground almost vertically, the meat being hung on a sharpened point.

417 A considerable amount of apparatus is manufactured. In front of each cabin is found
322 a sawhorse for sawing wood. This consists of a bedlog about six inches in diameter and five or six feet long. Close to each end two spruce saplings, about four feet long and an inch and a half in diameter, are driven into the ground so that they cross each other at about a thirty degree angle. The wood to be sawed is placed in these angles. The bedlog is sometimes also used in splitting sawed lengths of wood. In the bush near the settlement are one or more saw pits. Ladders are made to reach caches. The rungs are either set in holes or nailed to side pieces. At either end of the ladder braces are nailed to the side pieces of lumber. For carpentering, a felled tree is levelled with an ax and raised on two stumps to serve as a workbench. Another piece of apparatus is used for bending green lumber in the manufacture of toboggans and sleds (Fig. 3, r, and Pl. 6, a). About six feet long, this consists of the lower trunk and part of the root of a spruce tree. Unnecessary portions of the root and trunk are trimmed away so that the wood exhibits a natural curve which is hewed and planed on its upper surface. Two poles, about two inches in diameter, are nailed to either side of the trunk. Where they project a few inches in front of the root, a crosspiece about eighteen inches long is lashed. The space between the root and crosspiece holds the lumber inserted for bending.

224 Traps, which are an important category of capital goods, are generally purchased, but
[432] a few men still build deadfalls or set two or three snares for wolf and coyote. A trapper generally owns from thirty to fifty steel traps of various sizes some of which are given to

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

wives and children. A limited number of snares constructed of wire cable are also purchased by most families.

Fur destined for commercial channels is dried on fur stretchers. The several kinds of stretchers may be classified into two types, those used to stretch fine winter fur and those used for beaver skins. Winter fur stretchers are of two sub-types. The first, which may be designated as the keel variety, consists of a flat board known as the stretching board or mould. The dimensions vary according to the pelt for which they are designed. Cut from the wood of a packing case or a piece of hewed poplar or spruce, a keel stretcher for mink is about fifteen inches long, three inches in its greatest width and about a quarter of an inch thick. The edges of the board are crudely bevelled. The forward portion of the mould tapers sharply for an inch or so to hold the head of the skin being stretched. The keel for a mink stretcher consists of a piece of wood somewhat shorter than the length of the stretching board, half an inch thick, and two inches in its greatest width (Fig. 3, n, a). Along one side of its width the wood is perfectly level. In use this side of the keel is placed on top of the mould. Once inserted in the pelt with the pointed end under the head, the keel is lifted from the stretching board with a wedge consisting of any piece of wood about four inches long, an inch wide, and an inch thick.

The second sub-type of winter fur stretcher may be designated as the keelless variety (Fig. 3, n, b) and consists of two moulds separated by a wedge. These stretchers are used for furs like lynx, fox, coyote, wolverine, and wolf. Two pieces of hewed spruce about one and one quarter inches thick are used in the preparation of the mould. They are finished with an ax and planed smooth. For coyote and lynx skins each board is about six feet long and five to six inches across at the widest portion. The upper portion of each board tapers to a sharp point for about the foreward three inches. The rest of one side is gently rounded. The other side is level for about three quarters of the length. The wood is then sharply rounded to provide a handlelike end about a foot long. These boards are inserted into the skin so that the level sides are together. Between them is inserted a wedge, four feet long and tapering to a sharp point from a width of about four inches. The wedge forces the stretching boards apart thus spanning the skin. Including the time occupied in finding a suitable tree and hewing the lumber, about four hours are required to make a pair of these moulds.

A beaver stretcher is made by bending a green black spruce sapling, about seven feet long and an inch and a half in its widest diameter, into a half oval. A crosspiece, consisting of a spruce pole four feet long is lashed across the open end of the oval. The skin to be stretched is lashed to the stretcher with fine babiche, small holes being cut in the pelt's rim about two inches apart.

The frame used in cleaning moosehide is made by providing a ridge pole about twelve feet long and three or four inches in diameter. One end of this pole is lashed or nailed to a tree at a point about twelve feet from the ground. The other end is generally supported in a forked stick or may also be lashed to a nearby tree. Two poles three inches in diameter and about ten feet long are tied to this ridge pole with their lower end resting on the ground in a forty-five degree angle. The space between these poles is somewhat greater than the

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

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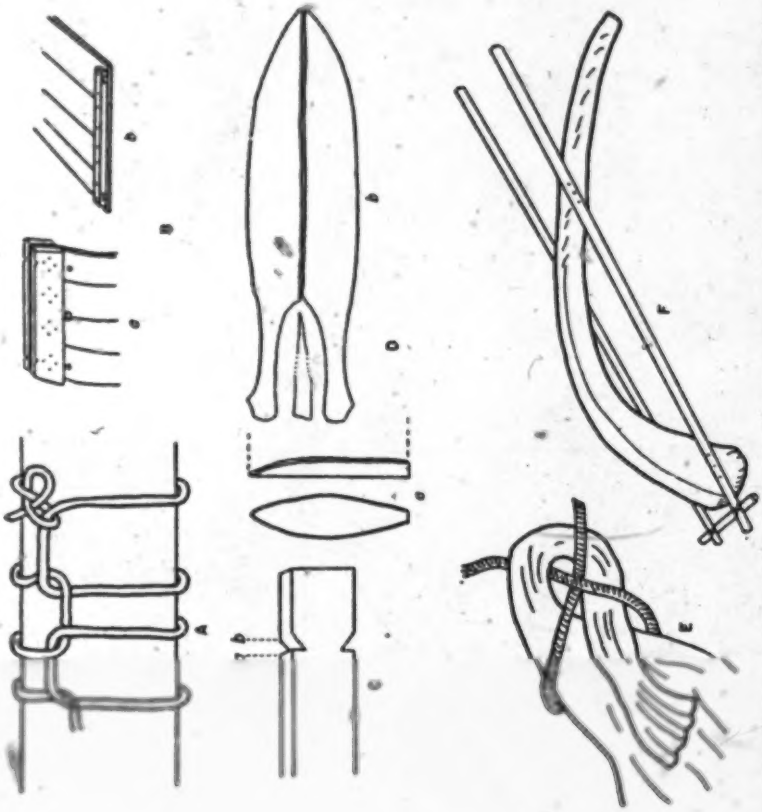

FIG. 3. Kaska Manufacturing Techniques: A, Hammock hitch for ax handle; B, Toboggan construction; C, Notched lumber; D, Stretchers for fur; E, Sheep bend for tarp; F, Bending frame for green lumber.

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

hide which is to be cleaned. Another pole is placed across the lower portion of the horizontally leaning poles and lashed in position. The skin is then perforated and fastened to the frame. When hides are to be softened, they are fixed on a smaller frame, consisting of four poles, in which the side poles are anchored in the ground perpendicularly (Pl. 8, D).

Construction of most apparatus and all tool making is done by men. Young girls sometimes make stretchers for squirrel skin and women commonly erect the poles for stretching and softening moosehide.

Machines employed by the Kaska have either been purchased from traders or adapted from white sources. Among the machines in the former category are sewing machines, owned by women but purchased by men, and outboard motors, the property of men. A pulley is a common possession and in the fall is used in conjunction with an improvised winch to pull boats out of the water. The winch is made by driving two poles about four inches in diameter and five feet long into the ground about six feet apart. Each pole is grooved on the side which is away from the water and about six inches from the top. A smooth green pole, about four inches in diameter, is fitted into these grooves to serve as a winch. The pull of the boat is sufficient to keep the winch from slipping out of the grooves. A handle is made by lashing a green spruce pole, about two feet long and two inches in diameter, at right angles to the winch.

Every household uses such cooking utensils as frying pans, straight kettles varying in size from one to five quarts, coffee pots, bowls, plates, cups, silver plated spoons and forks, wash basins, and washtubs. A few families have also accumulated china cups and dishes. Bottles and jars are generally saved for storing homebrew and may also function as baby bottles, candlesticks, and sugar bowls. The fifty pound drums in which dehydrated milk is purchased are used to store rice and flour. Empty sugar and flour sacks are widely used to contain tea, rice, meat, and many other commodities. Discarded oil tins are used for storing gasoline and kerosene.

Domestically manufactured utensils include moosehide gun cases, embroidered with silk thread, needle cases, made of scraps of cotton cloth, sewing kits of velvet fitted with pockets and embroidered with silk thread, and envelopes of birch bark containing sinew line or pounded beaver castors.

Productive capital. In general the producer goods needed by an individual or family, both home constructed and purchased, are found in every settlement. Thus each family is in an equal position to secure or create necessary consumer goods. Even if an object is not owned by an individual, it may generally be borrowed from others within the winter settlement or from nearby neighbors. If not immediately required by the owner, such articles are readily loaned, and rent is rarely or never demanded. If an outboard motor is loaned, the borrower is only expected to supply his own gasoline. When dogs are loaned, it is with the sole stipulation that they will be reasonably well fed and otherwise cared for. In short, the necessary productive capital is widely distributed or generally accessible.

EXPLOITATIVE ACTIVITIES

During nine or more months of the year, from the middle of August till late in May, the Kaska Indians are actively occupied in exploiting the resources of their sub-Arctic environ-

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

322 313 Woodworking. In recent years, because of the arrival of mill sawed lumber in Lower Post, the necessity of preparing this material by whipsawing and hewing has been reduced. In 1943 lumber began to arrive in the town via the Alaska Highway. When many construction camps along the road were demolished during the summer of 1944, the United States Army permitted the Indians to secure enough lumber gratis (the people paying only for transportation in white men's trucks) to complete cabins in Lower Post. In the fall of 1944 a commercial sawmill began operation near the town, and in the spring of 1945 a number of Upper Liard Indians, seeking to finish log cabins, bought lumber from this source for transportation to winter settlements. Nevertheless, in the bush, Indians are still often forced to depend on whipsawed and hand hewed lumber for necessary construction.

322 Poplar and red spruce are selected for the manufacture of coffins, beds, tables, and other household objects. Birch is preferred for toboggans and sleighs, while thin black spruce saplings provide snowshoe frames. Dry wood is regarded as easiest to whipsaw or split, but only green trees are used in preparing snowshoes, sleighs, and toboggans.

313 322 The first step in woodworking, after the tree has been felled and cleaned of limbs, is to cut the trunk into one or more sections the length of the desired lumber. When lumber is to be prepared by hewing, the trunk is usually split down the center. Several procedures are used in this process. In the case of poplar, the pole is first partly split by axing along a straight line and then completely split with the aid of a wedge. As the halves split apart, the wedge is removed and inserted further along the cut, or a second wedge may be inserted before the first is withdrawn. Small poplar, up to about four inches in diameter, is not split before being hewed. In the case of birch selected for a toboggan, only the lower ten feet of the tree are used, cut close to the ground. Before attempting to split birch, the surface is lightly hewed on two directly opposite faces. In this process the outer and inner bark are axed away together with a thin section of wood. Along each of these levelled surfaces a groove is cut, about one inch deep and three quarters of an inch wide. This work is done with an ax. To split the wood, the log is deeply axed along the length of one of these grooves. When the end is reached, a single strong ax blow usually causes the wood to split in half at this point. A wedge is now driven deeply into the split end. The worker goes beyond the wedge, toward the center of the log, and here again deeply splits the pole with his ax. Removing the wedge from its first lodging place, he drives it into the wood at the point where he has just axed. He continues this process until the log splits in half.

The split log to be hewed is propped against the branches of a spruce tree. Using a sharp ax the worker proceeds to ax away the rounded section of the trunk. Starting in the middle a series of gashes are cut through the bark into the wood until the bottom of the log is reached. Returning to where these gashes began, swift short strokes of the ax remove chips of the bark and wood. This process is repeated on the inner surface of the split log where, however, there is relatively less wood to remove. Hewing continues until the required thickness of lumber is achieved, although a piece of lumber is not hewed thinner than about one inch. Further thinning is obtained by planing. During the course of hewing, the log is reversed and what was the upper section is now hewed down from the middle. The work must always be done carefully in order to avoid a warped or uneven board. The hewing is little more than planing done with an ax. In preparing birch for a toboggan, con-

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siderable width is sacrificed in the lumber by the practice of hewing the inner section of the split trunk almost as much as the outer, rounded section. This is done in order to preserve that portion of the wood which bends more readily and which lies toward the outside of the standing tree. It also assures a stronger piece of lumber, since the softest wood is said to be on the interior near the core. Hewing is usually completed at the spot where the wood was obtained. The boards are then carried into camp where they may be further planed or seasoned and bent.

Two men can split a piece of poplar, seven feet long and about seven inches in diameter, and hew two boards, two inches thick, in about twenty-five minutes. Nitla, working more painstakingly, hewed an unsplit piece of poplar, seven feet long and four inches in diameter, in about thirty-five minutes. To split two birch logs, ten feet long and six inches in diameter, and hew three pieces of lumber, each an inch thick, occupied Hans Donnelly for about five hours. He worked patiently and carefully and seemed preoccupied with his task. Actually, however, he often stopped work to communicate some thought that was passing through his mind, generally one unconnected with the task at hand. He also solicited the ethnographer's opinion of what was being accomplished.

Lumber is whipsawed on saw-pits which stand in some nearby part of the forest where large trees are available. If a log cannot be moved to a saw-pit, it may be whipsawed by being felled across a fallen tree, or else it is blocked up with pieces of wood. In such cases whipsawing becomes a laborious operation in which one man must crawl under the log while the other stands at the upper end of the saw. Before whipsawing, the wood is generally cleaned of its bark. Guidelines for sawing are made along the length of the log by means of a string which has been rubbed with a piece of charred wood. Two men hold the string, one at either end of the log. One then picks up the line and allows it to snap against the wood, leaving the imprint of a straight line.

Thin poles, such as are used in making snowshoe frames, are hewed or trimmed with a butcher knife. Straight grained black spruce, about one inch in diameter, is selected for this purpose. Each pole is cut an inch or two longer than the desired length of the lumber and brought into camp. In cold weather the wood is thawed before being worked. With a knife, the pole is now trimmed on two directly opposite sides to a thickness of about five-eighths of an inch in the center but thinner at one end. The width of the original sapling is retained and even the bark is left on the wood at this point. The pole is now ready to be bent in order to serve as half a snowshoe frame.

Lumber is generally planed with a carpenter's plane and sawed with a Swedish buck or carpenter's saw, but in an emergency both these operations may be performed with an ax. To cut lumber with an ax, the ax is first driven straight into the wood at the point where the separation is desired (Fig. 3, c). The wood is then axed from below at a forty-five degree angle to the first cut. Further axing takes place at the apex of each angle, the blade driving straight into the wood until the separation is effected. In cutting with a saw, the T-square is used to mark off a straight edge. If sawing must be done along the length of a board, a charcoal line is used to mark off a level edge.

Wood may be bent on a bending frame or by hand. Toboggan boards are bent and dried on the bending frame described above.[1] That portion of a piece of lumber which was lowest

[1] [see category 116, p.58 -- Analyst]

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

322 in the standing tree is inserted to a depth of about three inches into a space provided at the lower end of the frame. The upper end of the lumber is then forced back until it approaches the deepest section of the curve of the frame. It is now lashed to the upper end of the apparatus with rope while a second and third piece of lumber are similarly inserted and bent. When all the wood to be bent is in the apparatus, the pieces are simultaneously further bent against the curved surface of the frame, being forced as far back as possible (Pl. 6, a). To prevent the wood from splitting during this process, cleats, a quarter of an inch thick and three inches wide, are nailed across the piece of lumber, the nails extending into the bending apparatus. When the lumber has been forced back as far as possible it is firmly lashed in position and left to dry.

The wood for snowshoe frames is bent by hand. Taking the thinnest portion of the wood, which will be the front of the snowshoe, the worker puts it under his foot and gradually bends the rest of the pole upwards. A notch is cut about half an inch from the front end but no other notches or holes are cut at this time. A rope or piece of babiche is then fastened from the tip to a point further back on the wood and is pulled taut enough to retain the desired bend. When both parts of a rim have been bent they are roughly lashed together in the form of the finished snowshoe. A block of wood takes the place of the struts in keeping the rims a proper distance apart and also helps to bend the rims further. The whole shoe is then spanned with a lever (Pl. 10, b) and dried in the warmth of a cabin.

While trees are sometimes allowed to dry before being worked into lumber, in the construction of toboggans and snowshoes, lumber is dried after it has been worked and bent. Drying is generally done in a house or tent, where there is a stove, and takes from three days to a week. Although it is recognized that long term sun drying is superior to quick indoor drying, no cases were observed in which objects had been made in the spring or summer and allowed to dry outdoors until winter.

322 462 Woodcarving with an ordinary butcher or pocket knife is a technique used in making toys, stirring spoons, trigger sticks, and other implements. Wood carving is done by men; the worker drawing the knife toward himself as he works.

283 *Cordage.* Although nails are indispensable for joining wood in constructing coffins, houses, and other large objects, line is widely employed in a variety of repairs and manufactures. The principal native lines manufactured by the people are cut from tanned and semi-tanned caribou or moosehide, or stripped from moose and caribou sinew. Line from fully tanned skin is prepared by cutting a piece of soft hide into a continuous strip up to a half-inch in width. Before being used a new piece of tanned skin line is tugged between the hands to stretch it.

Semi-tanned skin line, commonly known as babiche, is cut from caribou or moosehide from which all the hair and flesh has been cleaned and which has been soaked in water to soften. Moosehide babiche is much stronger than that made from caribou skin. The pieces of hide selected generally consist of the four outer edges which, in order that the skin could be lashed on the tanning frame, were perforated during the tanning process. Each strip is about ten inches wide and the length of one of the sides of the stretched moosehide—from five to seven feet long. The strip is cut away from the semi-tanned hide and soaked in a dishpan until it is soft and pliable. To cut the strip into line, two women seat themselves

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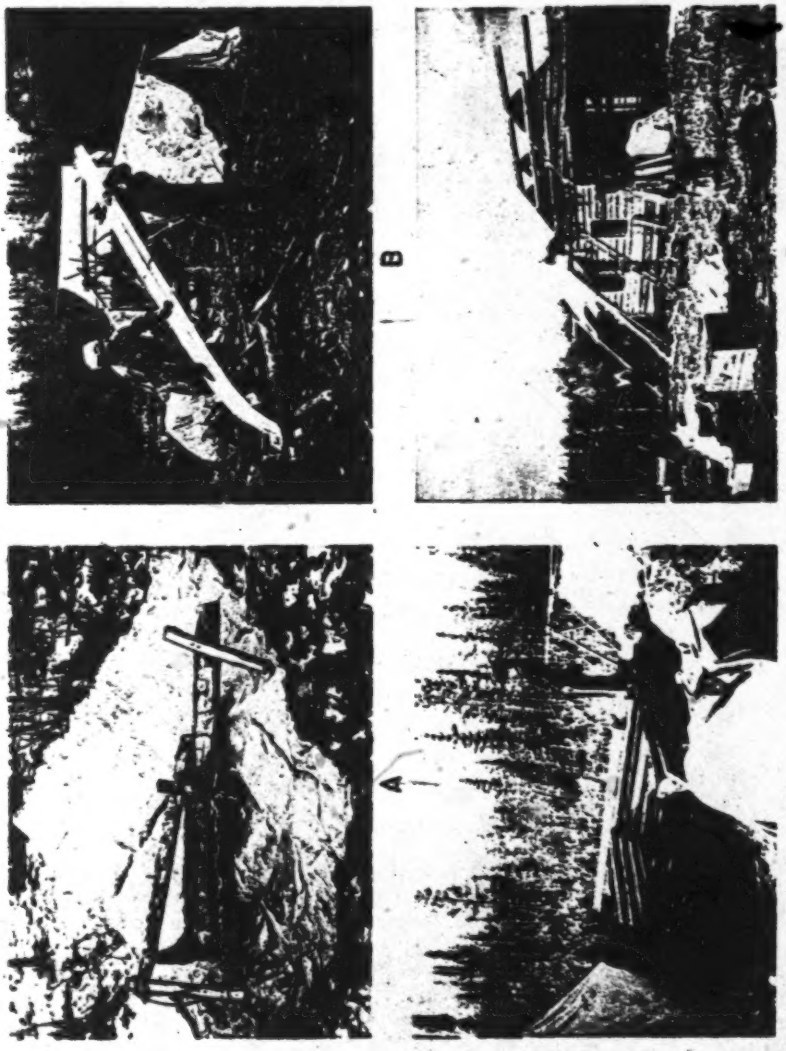

B D

A C

CONSTRUCTION

[END PLATE 6]

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

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A

B

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C

D

WORK, PLAY, AND SHOWMEN RESIDED

[END PLATE 10]

6: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12
Upper Liard

bone splinters. Needles with eyes appear to have been manufactured prior to contact, their use being aided by a "thimble" consisting of a flat piece of bone held in the palm. The bone arrow points will be described in connection with weapons.

As already indicated, horn from mountain sheep, goats, and caribou found a place in the technology. To prepare spoons and blades from goat or sheep horn the material was boiled until soft, split with a stone ax, and then shaped with a stone knife. Without previous boiling, caribou horn could be sharpened (by grinding ?) to provide an adze or scraper with an edge sharp enough to cut through the hairs on a caribou hide. The sharp point of a caribou horn made a useful tool for drilling through wood. Another drill consisted of a beaver tooth mounted in a wooden handle.

Although objects of wood and bark played important roles in daily living, woodworking remained a relatively undeveloped industry carried out with simple apparatus. Spruce appears to have been the most frequently used wood. The available cutting tools made it relatively impossible to cut down any tree larger than a sapling so that older trees had to be weakened by firing the base. Then came the problem of cutting the trunk into planks of desired length and thickness. A felled tree was split with a birchwood wedge driven with a maul made by halting a heavy stone in a wooden handle.[2] In the course of using a maul of this type a man sometimes chanted "gu guk, gu guk," the charm urging the lashing around the head of the maul to remain strong and not to loosen. Fabrication of the resultant planks into snowshoes, snow shovels, handles, and other objects demanded use of the cutting tools previously described. Spruce bark provided a variety of objects ranging from canoes to drinking and storage vessels. Large pieces of bark were often peeled by a skilled man who, after selecting a suitable tree, climbed into it on a ladder consisting of a spruce sapling leaned into the branches. After clearing the trunk of branches he cut a girth around the tree with a caribou-horn adze. He then split the bark lengthwise for about four feet and peeled it free from the trunk with a wooden barking tool fitted with a crook. This implement partly encircled the tree, under the bark. The loosened rind was tied in place around the trunk with babiche line while the worker lengthened the split downward by cutting. This continued until the bottom of the tree was reached. Here another girth was cut and from the ground several men now pulled the strip fanwise from the tree. The lashing at the top of the piece had been left loose enough to permit the large sheet to gradually slip down as the men drew the lower edges free. White birch bark, scarce along the upper Liard River, found little place in technology.

From the pelts of slain animals the people secured garments, sleeping robes, and storage bags. First, however, the skins had to undergo processing to render them fit for these purposes. Fur covered pelts required thorough fleshing after which they were dried and perhaps stretched. Beaver skins were dried and stretched on oval frames of willow very similar to the type still in use. People stretched lynx, fox, muskrat, and similar pelts, peeled whole from the animal's body, over form boards that slipped into the skins. Rabbit skin, intended for cutting up into plaiting line, could be best dried

[2] Hafted stone sledge hammers as well as plain wooden mauls are specified to have been made by the Tlingit. Drucker, *Culture Element Distributions: XXVI, Northwest Coast* (1950), 183.

6: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12
Upper Liard

beavier pole was employed. In winter, brush placed under the point where a fall log rested on the snow prevented this part from sinking. The pen behind the trigger stick was also provided with spruce boughs. Beaver deadfalls, erected on land behind a beaver house, were of the platform variety, the platform being secured to the samson post with spruce-root line and weighted down with rocks or earth—in winter only rocks. Ground-hog deadfalls also followed the platform pattern, the 14-inch samson post consisting of a bent alder limb or crooked spruce root. Nets of semi-tanned skin line spread under the ice also helped to catch beaver. After the net had been set the trapper broke down the animals' house, causing the inhabitants to flee toward the net. The trapped beaver were dispatched after the net was raised. The suggestion that pitfalls may have been used along the Upper Liard comes only from their mention in folktales.[9]

For hunting the Indian armed himself with the bow, arrows, spear, gaff hook, sling, or club. Black-birch wood provided the favorite material for bows and, as in toboggan construction, the wood that grew nearest the outside of the tree was thought to be best suited for bending. A small amount of (inner?) bark was often left on the bow wood in order to increase its resiliency. The size of a bow varied; a boy's reached from the ground to just above the stomach, while a man's extended to h forehead. Fitted to such large bows by means of a lashing that passed through two holes drilled in the stock, was a guard about the size of a violin bridge. It prevented the bowstring from snapping back against the fingers. A backing of tanned skin line sometimes appeared on each side of the guard. Occasionally bows were decorated with a "peppermint stick" design applied by masking the stick with widely spaced strips of spruce bark and then drying the wood over a fire. When dry the bark was pulled free, leaving an attractive black and white striped effect. Double-strand, twisted, cold-weather dried babiche supplied the bowstring. The informant objected to employing sinew, claiming that this substance would be too weak. One end of the line was knotted to an end of the bow stock, while an eye on the free end slipped into a notch at the stock's opposite end.

A light wood, such as spruce, ranked highest for arrows. A stick cut to suitable size was heated and then straightened by being worked back and forth in a forked stick split a short distance below the fork. A nock cut on the rear of the shaft fitted against the bowstring. The size of an arrow depended in part on its intended function; for game birds 24 inches was a standard size while 3 feet constituted the size of a shaft suitable for big game hunting. Points also varied according to function. Detachable points of bone barbed on only one side[10] were secured to shafts by means of line. Double bone points, the barbs facing in opposite directions, served to kill spruce hens and grouse. Blunt-tipped shafts fitted with a quarter-inch deep notch brought down rabbits and other small game. Finally, detachable stone points that remained in the animal after the shaft was withdrawn or broken off were reserved for big game. To shoot fish a detachable flint point was provided and attached to the shaft with two feet of tanned skin line.

[9] Pitfalls seem to have been absent among the Fort Nelson Slave. Honigmann, *Ethnography and Acculturation of the Fort Nelson Slave* (1946), 37.

[10] Cf., Osgood, *Ingalik Material Culture* (1940), 203; Illustration a.

6: Honigmann E-5 (1943-1945)1954 ND12 Nahanni ND12
Frances Lake
Upper Liard

formants, who were young men with records of considerable time spent in the Liard Valley. It is likely that the patterns already presented also largely obtained in the Frances Lake area."[11]

TRAVEL AND TRANSPORTATION

Upper Liard Kaska. Foodgetting among the Indians of the taiga depended thoroughly upon mobility. Although a little travel occurred for other purposes, two main patterns of mobility may be distinguished. First, groups of people moved with their belongings to various parts of the tribal territory in search of new food resources to exploit. Such travel took place, for example, in the fall when the population moved to the mountains and again in early winter when they journeyed down to fish lakes. Second, there took place a great deal of "short term" travel, required of men pursuing game or of women visiting fish nets and berry patches. The Indians remained mobile in every season but the techniques of travel differed to a considerable extent between winter and summer. With snow on the ground and bodies of water covered with ice the toboggan and snowshoe provided the basic travel aids while in the season of open water travelers relied on the canoe, paddle, and raft.

Animal skins as well as wood were utilized for toboggans. Beaver skins prepared with the hair served well for traction, the smoothness of the pelt aiding their easy passage over the snow. Three such skins sewn together constituted a good sized vehicle. A number of skins from the hind legs of moose or caribou might also be sewn together with sinew to make a toboggan six feet long and two feet wide. To hold goods securely the rear portions of skin toboggans were stitched "like a baby bag." Prepared by a woman, a skin vehicle would last a winter or even two if stored in a dry place when the snow began to melt. A man manufactured undecorated wooden toboggans, tamarack being the preferred material. After splitting the green wood with a wedge he planed the boards with his stone knife. Wood from the exterior section of the tree bent most readily, the bending process being accomplished by moistening the lumber with warm water and then forcing the board back "against a pole."[12] The running boards were sewn to cross

[11] Similar patterns are reported for the Pelly River people by Field, who says, for example, that the Pelly River people moved into "a good game country about the end of August when all game is fat, to put up a cache of dry meat for the winter months." In fall women busied themselves drying groundhog and gopher. The Indians of the Ross and Pelly valleys subsisted primarily on meat and fish. Men "used bows and arrows to hunt with, spears, snares, deadfalls also. They would make long fences when the caribou and sheep came below timberline, sometimes packing poles to make their fences up with on top of the mountains. They would leave spaces big enough for a caribou or sheep to go through in their fences and get snared in them. Whenever a herd was sighted they would try to surround them and drive them through their fences." Cordage for snares came from twisted "sinew or caribou skin rope" and the line was anchored to a moveable pole toggle. "Wherever the Indian kills every way, with nets in winter, spears and shoots them . . . and kills them with a club." The gaff stick also served in hunting beaver. (Field, *Unpublished manuscript* [1913].) An Upper Liard informant (H) reported with some distaste that the Ross River Indians deliberately cultivated mold in meat that was later cooked. Such meat proved too strong for the taste of the Liard River people.

[12] The method no doubt resembled that executed by a Frances Lake Indian in 1945. See Honigmann, *Culture and Ethos of Kaska Society* (1949), 40, 73-74; also Pl. 6, a and b.

6: Honigmann; E-5 (1943-1945) 1954 ND12 Nahane ND12

Upper Liard

pieces with babiche line countersunk in order to avoid wear by friction. At the end of the winter a careful man hung his toboggan in a tree on its upturned nose, the heavy brush protecting the vehicle from rain. 493 322

In loading a toboggan the traveler placed the heaviest load in front, this practice facilitating handling of the vehicle. Women drew toboggans when moving camp but men returning from a hunt drew meat on skin or wooden vehicles. With the introduction of dogs large and strong enough for traction, the tandem hitch came into use for traveling through bush. Toboggans were not used to transport people, with the exception of small children. 489 483

The powdery snow of the Cassiar would have hindered foot travel during a large part of the year had means not been available for adapting to this boreal forest condition. To break a trail on which the toboggan could move easily without sinking too deeply, as well as for hunting in soft snow, people employed snowshoes. An origin tale explains the introduction of these aids to travel. 481

In the beginning people couldn't walk as they had no snowshoes. An old man suggested taking advantage of the upraised end of a spruce branch. Wearing such brush on his feet he went up into the mountains to kill porcupine. The man's name was Kligudeta, "snowshoe filling father." The people tried the idea but couldn't go far. The old man then hit upon the improved device of a snowshoe frame. He fashioned one with a stone knife and used a beaver tooth chisel to drill large holes in it. A porcupine tooth set in that animal's jawbone served to drill the holes for the fine filling. These people showed everybody how to make snowshoes and the old man became rich making snowshoes for others (X).* 481 539

Aboriginally the Upper Liard Indians manufactured temporary, round and pointed snowshoes. A man caught in an early winter snowfall and lacking his regular snowshoes would prepare a camp and make temporary devices. Bending and lashing a branch of willow or some other easily pliable wood into a rough circle he further provided two crosspieces consisting of short lengths of willow split at either end. The split edges were pulled fanwise in the shape of a crude v and each bar of the v was then lashed to the willow frame. Of the three panels thus formed only the center one was filled with whatever odds and ends of skin line the maker happened to have in his possession. The fronts of such snowshoes were not usually upturned. The wearer discarded temporary snowshoes once he had reached the main camp. The use of two converging willow poles in constructing temporary snowshoes was not known. 322 481

The round or Loucheux type snowshoe is said to have been in early use along the upper Liard River. The native term, however, gives no clue to relative chronology being translated as "snowshoe with pieces overlapping in front." Spruce provided the preferred material for the frames. Although birch was sometimes substituted for spruce, the former wood is said to have picked up and carried too much snow in spring, thereby increasing the weight of the shoe. One informant (O) was much impressed with the use of maple for frames. He had secured a pair of maple snowshoes in Juneau made by a Tlingit Indian and claimed the wood to be perfect for shedding snow. This tree, how-

* We are inclined to see the last part of the story as a late addition to the tale. A young Tahltan woman reported that her people ascribe the origin of the snowshoe to Wolf.

6: Honigmann E-5 (1943-1945) 1954 ND12 Nahane ND12
Upper Liard

322 481 over, does not grow in the Cassiar.[38] Aboriginally wood for snowshoe frames was bent after first being carefully chewed with the teeth. The forward overlap of the two parts of the frame extended for about five inches on a trail snowshoe and somewhat more on the shorter hunting variety. Two or three cross pieces resulted in three or four panels. A rounded snowshoe, it is claimed, did not sink into the snow as much in front as the pointed variety nor would it pick up as much snow.[39] While known aboriginally, the pointed snowshoe became more common following European contact.

A craftsman "tailored" the size of snowshoes to their intended function. If designed for breaking trail in front of a toboggan or for following an already broken trail the average size person could get along with snowshoes about three and a half feet long. Hunting snowshoes, designed for remaining near the surface of deep, loosely packed snow, almost equalled the height of the prospective wearer, the width being somewhat [483] adjusted to the user's relative weight. Two varieties of babiche line served for filling, first, a heavy cordage that was woven into the center panel supporting the direct weight of the wearer, and second, a fine line for the front and rear panels. Both men and women knew how to fill snowshoes but the process generally occupied the latter. In applying [413] the fine filling the artisan needed a bone snowshoe needle. In one type of needle the blunt end of the instrument was made concave in order to push through the line. The other end formed a slight hook, useful for pulling the line upward through filling already laid down. Another type of needle, made of wood or bone, contained a center eye in which to anchor the filling cord. Prior to lacing, loops of cordage had to be provided around the inside of the frame, to which the webbing of the front and rear panels could be anchored. Holes for these loops are said sometimes to have been drilled with a piece of hardwood heated to a glow and then pressed against the appropriate point of the frame. Several reheatings of the "awl" were necessary to complete the task. Beaver- and porcupine-tooth awls served as much more efficient drills.

481 284 The following patterns of snowshoe lacing are derived from an analysis of contemporary snowshoes. No radical differences from aboriginal practice could be discovered. When starting to fill a snowshoe the worker usually turned to the front panel, the line beginning at the right hand side (Fig. 4, UPPER LEFT, facing front end of snowshoe). One end of the line passed through the first framework loop (17) where it was tied with a double overhand knot. The other end was carried back to the crosspiece. Bending over the top of the strut (18) it came out from below and traveled up to the toe where it bent over the babiche which here held the frame together (9). (Aboriginally the Loucheux type shoes must have been provided with loops going completely around the front of the panel.) Coming out from below, the line twisted against its own part and

[38] Rocky Mountain maple "is especially used in making snowshoes and bows" among the Sekelkan Thompson Indians. Steedman, *Ethnobotany of the Thompson Indians of British Columbia* (1930), 499, 500; Ray, *Culture Element Distributions: XXII, Plateau* (1942), 138.

[39] At Fort Nelson an informant expressed an opposite preference when he said that rounded front snowshoes were of little use "in this country, but in the North, where the snow is packed hard, they can be used." (Honigmann, *Ethnography and Acculturation of the Fort Nelson Slave* [1946], 45.) Needless to say there is no difference in the quality of the snow between the Fort Nelson and Cassiar areas. The opinions represent diverse attitudes toward a bygone culture pattern.

6: Honigmann E-5 (1941-1945)1954 ND12 Nahane ND12
Upper Liard

forward crosspiece, came up from below and bent across the 25-7 strand from above (27), bent across the forward crosspiece from above (3), then twisted three times around the 3-14 strand between the forward crosspiece and the 25-7 strand, and twisted around the 25-7 strand enroute to the left hand frame, where the line knotted at station 25 with a single overhand knot that included one part of the 25-7 strand.

Two types of harness, both made from smoked-skin line, secured the snowshoe to the moccasin-covered foot. One of these is said to have been introduced into the area from Fort Liard and is currently referred to as the "Nahane type" (Fig. 4, CENTER RIGHT). The other was in use among the Liard River and "Tlingit" (probably Taku) people (Fig. 4, LOWER RIGHT).

To avoid slipping on steep inclines four bone pins were sometimes inserted into holes provided at the bottom of each snowshoe. The pins projected about an inch from the wood. The snowshoe staff further aided walking in hilly country. It consisted of a stick about four feet long with a hoop that was laced with babiche line. The hoop was located a short distance from the lower end of the staff and consisted of a short length of willow bent and lashed in the form of a circle. The filling served to keep the hoop affixed to the staff. A man prepared wood for this implement while women customarily added the filling. No distinctive name for the snowshoe staff could be learned, informants designating it merely as "walking stick." Morice, however, has translated the Carrier name for this implement as referring to the "circular attachment which prevents it [the staff] from sinking too much in the snow."[9] Men wore snow glasses when traveling across snow made bright by the spring sun. These implements consisted of strips of tanned skin or birch bark provided with eye slits. The area around the slits was blackened with charcoal to further reduce glare.

Land travel in summer or winter generally involved men walking in advance of the women, who remained in charge of children and household goods. This pattern left men free to intercept or follow game, reduced disturbance that might drive away game, and also enabled men to prepare sufficient wood for a comfortable camp before the women arrived. Sometimes women and children did not reach a camp until midnight. In autumn, enroute to the ground-hog trapping grounds in the mountains, a number of families moved together, the men scouting for moose and the women walking in old and well-defined trails. People crossed streams on rafts as well as on log bridges constructed by felling either one, two, or three thin trees or by shifting an already fallen tree into position to serve as a span. In traveling to a game kill, as well as in other types of cross country movement, Indians sometimes indicated their route by blaze. One type of blaze consisted of a willow or other branch broken in the specified direction. In an "open place" the route might be indicated by hanging moss in trees, while up in the barren mountain tundra, which composed a sizable part of the Kaska territory, successive rock piles served as guides. River valleys were commonly referred to in giving

[9] Morice, *Carrier Language* (1932), 62. Lantis describes a similar "snowshoe stick" in use among the Nunivak Eskimo. (Lantis, *Social Culture of the Nunivak Eskimo* [1946], 147.) While informants among the Attawapiskat Cree Indians of James Bay denied the use of snowshoe pegs or the snowshoe staff the counterpart of the latter may have existed in "crutches" with a webbed lower end. These allowed lame persons to support themselves on snow. Honigmann, *Attawapiskat field notes* (1947-48).

[Erratum. Probably meant "name" — Analyst]

6: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12
Dease River

vehicle. Women as well as men drew the toboggans, a harness for this purpose consisting of one moose-hide line passing around the outside of the arms and around the chest while another cord passed over the top of the head. 481 493

Snowshoe types included the round or Loucheux style (said to have been preferable because of its lighter weight) as well as the pointed variety. Function determined the length of these appliances, long shoes being best adapted for a hunter's swift travel in deep snow. Small shoes served well to break trail for a toboggan. In case of emergency a man made temporary snowshoes by bending and lashing a willow pole, which he then filled with heavy babiche line. Children usually employed such crude snowshoes throughout the winter. The customary division of labor appeared, a man constructing the framework while a woman applied the filling. Bone snowshoe needles contained a concave depression at one end that served to push the line between closely laid strands of filling. 481 322 [464] [813]

In any season the order to travel required men to walk ahead of women, a pattern that allowed them to break trail for the women and children. Blazes consisted of willow and other branches broken in the direction taken. Sometimes men hung moss in the branches of a tree, laid down stones to indicate a course, or cut the trunks of trees with a caribou-horn ada. A single tree felled by fire provided a convenient bridge. Occasionally more complex spans containing a number of poles provided safer means for crossing a stream. The tump line facilitated packing and pack sticks remained unknown. Baby packs consisted of tanned skin padded with moss. In this container the child faced away from the mother. When old enough to leave the moss bag a youngster rode facing the mother on the latter's back supported by a baby strap that was passed around the outside of the arms and tied in front of the woman's breast. Such belts were often decorated with porcupine-quill embroidery. Bark baby carriers were not made. 487 499 854 [531]

For communication between traveling groups, the Indians sometimes made use of smoke signals, a single smoke calling attention to a game kill. Also runners might be sent to invite people to the scene of a kill, young men being able to cover 20 miles by running in a single day. Picture writing or drum language were both lacking. 202 [212]

For water transportation the Dease River people relied on rafts, moose-skin boats (which occasionally reached a length of 20 feet), dugouts, and spruce-bark canoes. A raft contained the necessary number of poles lashed to crosspieces with tanned-skin line. Pointing the bow gave the craft greater speed. An earthen fireplace was often situated somewhat forward on a pointed raft, but people invariably spent nights on shore in the course of traveling. Two varieties of spruce-bark canoes may be distinguished, small vessels serving one or two hunters and larger boats for traveling. The bark was sewn to the framework with spruce root line. Decked canoes, sails, or canoes traveling in pairs could not be recalled for the pre-contact period. Men cut paddles from spruce wood. Rounded handles were denied for these implements, the informant claiming that the upper end of the shaft contained a crosspiece on which the canoer fastened his grip. Such crutch-like handles must have resembled the type in use on the Northwest Coast. A ridge was left on the center of the blade, the edges of which might be decorated with notches burned into the wood. 501 505 [372] [171] [53]